

REMARKS**Overview**

Claims 7-10, 12, 13, 15 and 17-20 are pending in this application. Claims 7, 13 and 15 have been amended. The present response is an earnest effort to place all claims in proper form for immediate allowance. Reconsideration and passage to issuance is therefore respectfully requested.

Issues Under 35 U.S.C. § 103

Claims 7-10, 12-13, 15, and 17-20 have been rejected under 35 U.S.C. § 103 as being obvious over U. S. Patent No. 6,023,217 to Yamada et al. in view of U. S. Patent No. 3,474,305 to Szupillo, U. S. Application No. 2001/0017770 to Copetti et al. or Sato (61-27264). These rejections are respectfully traversed. As Yamada does not disclose an outer layer of a tantalum oxide, the Examiner relies upon Sato, Copetti or Szupillo as suggesting the material of the outer layer be tantalum oxide (Office Action, p. 3, numbered paragraph 3). Sato is directed to a thermal head and not a thin film chip resistor and discloses sputtering a layer of tantalum pentoxide as an abrasion resistance layer. Copetti uses dielectrics such as tantalum pentoxide to separate conductive layers. Szupillo discloses using oxidized films to form an electrically insulative barrier layer.

Claim 7 has been amended to require "without use of a screen-printed moisture barrier". Yamada discloses an outer protective barrier 24 (typically epoxy resin) which covers a resistance layer 23 (typically ruthenium oxide). The protective layer is a resin paste that is thermally cured. This screen printed resin paste which requires thermal curing is the antithesis to the claimed invention. In fact one of the very objects of the present invention is to provide "a moisture

barrier for a thin film resistor [which] replaces screen-printed moisture barriers (Specification, page 2). It is a further object of the present invention to provide for "a moisture barrier for a thin film resistor that is compatible with normal manufacturing techniques and materials" (Specification, page 2). Yamada is wholly inconsistent with both of these objects. Thus it is respectfully submitted that the differences between Yamada and what is claimed are highly significant differences. To clarify, claim 7 has been amended to require "without use of a screen-printed moisture barrier." It is further observed that claim 7 already requires "an outer moisture barrier formed from deposition of tantalum oxide on the metal thin film resistive layer and not through oxidation of tantalum." It is submitted that these limitations emphasize the differences between Yamada and the claimed invention and that these differences are significant. One of the reasons that these differences are significant is that they speak to the problem recognized by the present inventors and not addressed by the prior art – namely providing a moisture barrier to a non-tantalum thin film resistor without screen printing. "The discovery of a problem calling for an improvement is often a very essential element in an invention correcting such a problem. Though the problem, once realized, may be solved by use of old and known elements, this does not necessarily negate patentability." *In re Bisley*, 197 F.2d 355, 94 U.S.P.Q. 80, 86 (C.C.P.A. 1952). Here Yamada, nor the other prior art references speak to the particular problem addressed by the present invention and the problem is clearly presented in the claims given that claim 7 has been amended to require "without use of a screen-printed moisture barrier." Moreover, "The problem solved by the invention is always relevant." *In re Wright*, 838 F.2d 1216, 6 U.S.P.Q.2d 1959, 1961 (Fed. Cir. 1988). Here, it is asked that the Examiner further consider the specific problem recognized by the inventors and being solved by the present invention as a part of the obviousness inquiry.

As claims 8-10 and 12 depend from claim 7 it is respectfully submitted that these rejections be withdrawn as well. In addition, for the same reasons, the rejections to claims 13, 15, and 17-20 should also be withdrawn. With respect to claim 12, there is an independent basis for patentability as claim 12 requires that the tantalum pentoxide layer is overlaid by sputtering. Sputtering is not the same as screenprinting. None of the references disclose sputter depositing a layer of tantalum oxide *to provide a moisture barrier in a thin film resistor*. Yamada discloses screen printing a protective layer for a thin film resistor. Szupillo discloses using an electrical insulating material and lists tantalum pentoxide as one type of material that can be used. Sato is directed to a thermal head and not a thin film chip resistor and discloses sputtering a layer of tantalum pentoxide as an abrasion resistance layer. Copetti uses dielectrics such as tantalum pentoxide to separate conductive layers.

It is respectfully submitted that the Examiner is focusing on the obviousness of substitutions and differences instead of the invention as a whole. This is not permitted. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 U.S.P.Q. 81, 93 (Fed. Cir. 1986). It is also respectfully submitted that the Examiner is merely relying upon improper hindsight. In particular, the Examiner has not articulated why one skilled in the art would have made the proposed combination (i.e. why replace the screen printing of epoxy of Yamada with depositing tantalum pentoxide?). Moreover, the Examiner has not indicated what in the prior art as a whole would suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). In particular, why use specifically a tantalum oxide? Szupillo and Copetti use tantalum pentoxide interchangeably with other dielectrics. The references cited do not speak to the tantalum

pentoxide as a preferred barrier for reducing failures due to electrolytic corrosion under powered moisture conditions.

Conclusion

This amendment accompanies a request for continued examination (RCE). No other fees or extensions of time are believed to be due in connection with this amendment; however, consider this a request for any extension inadvertently omitted, and charge any additional fees to Deposit Account No. 26-0084.

Respectfully submitted,



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